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PROCEEDINGS
OF THE
AMERICAN PHILOSOPHICAL SOCIETY.

VOL. II. JAN., FEB., MAR. & APRIL, 1842. No. 21.

Stated Meeting, January 7.

Present, twenty members.

Dr. PATTERSON, Vice-President, in the Chair.

The judges of the annual election, held this day, reported that the following officers had been chosen for the present year:—

President.

Peter S. Du Ponceau, LL. D.

Vice-Presidents.

Nathaniel Chapman, M.D.,

Joseph Hopkinson, LL. D.,

Robert M. Patterson, M.D.

Secretaries.

Franklin Bache, M.D.,

John K. Kane,

Alexander Dallas Bache, LL. D.,

Robley Dunglison, M.D.

Counsellors for Three Years.

Clement C. Biddle, LL. D.,

William Short,

Joseph Henry, LL. D.,

Philip H. Nicklin.

Curators.

Isaac Hays, M.D.,

Franklin Peale,

John P. Wetherill.

Treasurer.

George Ord.

Letters were read:—

From the Geological Society of London, dated 4th November, 1841,—the Society of Antiquaries of London, dated 19th Nov. and 3d Dec. 1841,—the Imperial Medico-Chirurgical Academy of Moscow, dated $\frac{1}{13}$ th June, 1841,—and the Boston Society of Natural History, dated 2d June, 1841, acknowledging the receipt of copies of the Transactions and Proceedings of the Society:—

From the Institute of the Netherlands, dated 28th February, 1840, stating that duplicate copies of the sixth, seventh, eighth and ninth volumes of the Memoirs of the Institute had been forwarded to the Society:—

From Mr. William Vaughan, of London, addressed to Mr. John Vaughan, relating to documents received from the Society:—

From Mr. Peter Force, of Washington, dated 28th Dec. 1841, stating that he had forwarded three volumes of the American Archives to the Society:—

From Mr. Du Ponceau, dated 6th Jan. 1842, inclosing letters from Mr. Alcott:—and

From Mr. Jacob Snider, Jun., dated 7th Jan. 1841, transmitting a copy of the will of the late John Vaughan, Esq.

The following donations were announced:

FOR THE LIBRARY.

Nieuwe Verhandelingen der Eerste Klasse van het Koninklijk Nederlandsche Instituut van Wetenschappen, Letterkunde en Schoone Kunsten. Seven Parts. 4to. Amsterdam, 1837–38–39–40.—

From the Institute of the Netherlands.

Verhandeling over het Verschil Tusschen de Algemeene Grondkrachten der Natuur en de Levenskracht. Door C. G. Ontijd. 8vo. Amsterdam, 1840.—*From the Author.*

A Discourse in Commemoration of the Life and Character of the Hon. Nicholas Brown, delivered in the Chapel of Brown University, Nov. 3d, 1841. By Francis Wayland, D.D. 8vo. 1841. *From the Author.*

Bulletin de la Société Impériale des Naturalists de Moscou. Nos. 1 to 4 for 1840, and No. 1 for 1841. 8vo. Moscow.—*From the Society.*

The American Journal of the Medical Sciences. Edited by Isaac Hays, M.D. No. 5. New Series. Philadelphia, 1842.—*From the Editor.*

The Committee, consisting of Mr. Lea, Mr. Taylor, and Mr. Vanuxem, to whom was referred the paper of Professors William B. Rogers and Henry D. Rogers, entitled "Observations on the Geology of the Western Peninsula of Upper Canada, and the Western part of Ohio," reported in favour of its publication in the Society's Transactions, which was ordered accordingly.

Major Bache made an oral communication in relation to a method which he had recently practised for obtaining the magnetic meridian.

He stated that the instrument used in the operation was a theodolite of the ordinary English construction, having eight inch plates, with double verniers, reading to fifteen seconds, and a needle, $3\frac{3}{4}$ inches in length, moving in a compass box graduated to degrees. The method consists in measuring two equal arcs with the needle, one on each side of the zero, and referring them to the graduation on the limb of the instrument; the line bisecting the sum of these, as shown by the same means, being assumed as the magnetic meridian. The advantages which this mode has over the ordinary one by a single reading of the needle, consist in the means afforded by the graduation on the limb of the instrument, for ascertaining the probable error in each single determination of the meridian; and for referring any number of sets of observations to a fixed graduated plate, by which a mean of a series may be obtained. The mode of operating is as follows: the theodolite being levelled, and the horizontal limb unclamped, the upper plate is moved by hand until the needle coincides nearly with the graduation at 45° on the compass box. The limb is then clamped, and the final movement made with the tangent screw; the observer placing himself for that purpose in range with the centre pin and given line on the compass box; the coincidence being considered satisfactory when the eye can no longer distinguish the end of the needle from the end of the line of the graduation. The reading on the limb is then made. The plates are now unclamped, and the upper one turned to bring the needle, as in the first instance, near the graduation at 45° on the other side of the zero; and the operation for obtaining a nice coincidence is performed, and the limb a

second time read. The line, bisecting the angle given by these two readings, is the magnetic meridian, as indicated by the needle of the instrument. To show the accuracy of which this method is susceptible, he mentioned that, on the occasion referred to, the angle of 90° was measured by the needle, on the first trial to within three minutes and thirty seconds, on the second to within two minutes; and that in no case afterwards did the error amount to one minute, and frequently it was less than thirty seconds. He expressed the opinion that any one accustomed to the use of instruments may obtain equally satisfactory results. In conclusion he deemed it proper to state that the theodolite used was made by Mr. Edward Draper, Mathematical Instrument Maker, of Philadelphia.

Dr. Hays announced the decease of Professor de Candolle, of Geneva, a member of the Society.

Mr. Kane informed the Society that the Secretaries had appointed Dr. Bache, Reporter, and Dr. Dunglison, Corresponding Secretary for the present year.

Mr. Lea, Chairman of the Publication Committee, laid upon the table the First Part of Volume VIII. of the Society's Transactions; and Mr. Kane, late Reporter, the closing Number for 1841 of the Proceedings.

Dr. Patterson, on behalf of the Committee on the Museum property, requested authority to memorialize the Legislature for a grant of the necessary powers, to enable the Society to make disposition of the Hall now occupied by it; which request, on motion, was granted.

On motion of Prof. A. D. Bache, the Curators were requested to receive the standards of measure, left by Mr. Vaughan to the Society, and to have them placed in suitable cases and deposited in the Cabinet.

Special Meeting, January 15.

Present, fourteen members.

Mr. DU PONCEAU, President, in the Chair.

The President announced the death of Joseph Hopkinson, one of the Vice-Presidents, which occurred this day, in the